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Sequence Listing was accepted.

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Reviewer: Durreshwar Anjum

Timestamp: Mon Oct 15 09:17:02 EDT 2007

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Application No: 10560303 Version No: 1.0

**Input Set:**

**Output Set:**

**Started:** 2007-09-26 16:48:14.742  
**Finished:** 2007-09-26 16:48:27.466  
**Elapsed:** 0 hr(s) 0 min(s) 12 sec(s) 724 ms  
**Total Warnings:** 60  
**Total Errors:** 0  
**No. of SeqIDs Defined:** 92  
**Actual SeqID Count:** 92

Error code	Error Description
W 402	Undefined organism found in <213> in SEQ ID (1)
W 402	Undefined organism found in <213> in SEQ ID (2)
W 402	Undefined organism found in <213> in SEQ ID (3)
W 402	Undefined organism found in <213> in SEQ ID (4)
W 402	Undefined organism found in <213> in SEQ ID (5)
W 402	Undefined organism found in <213> in SEQ ID (6)
W 402	Undefined organism found in <213> in SEQ ID (7)
W 402	Undefined organism found in <213> in SEQ ID (8)
W 213	Artificial or Unknown found in <213> in SEQ ID (9)
W 213	Artificial or Unknown found in <213> in SEQ ID (10)
W 213	Artificial or Unknown found in <213> in SEQ ID (11)
W 213	Artificial or Unknown found in <213> in SEQ ID (12)
W 213	Artificial or Unknown found in <213> in SEQ ID (13)
W 213	Artificial or Unknown found in <213> in SEQ ID (14)
W 213	Artificial or Unknown found in <213> in SEQ ID (15)
W 213	Artificial or Unknown found in <213> in SEQ ID (16)
W 213	Artificial or Unknown found in <213> in SEQ ID (17)
W 213	Artificial or Unknown found in <213> in SEQ ID (18)
W 213	Artificial or Unknown found in <213> in SEQ ID (19)
W 213	Artificial or Unknown found in <213> in SEQ ID (20)

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**No. of SeqIDs Defined:** 92  
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Error code	Error Description
W 213	Artificial or Unknown found in <213> in SEQ ID (21)
W 213	Artificial or Unknown found in <213> in SEQ ID (22)
W 213	Artificial or Unknown found in <213> in SEQ ID (23)
W 213	Artificial or Unknown found in <213> in SEQ ID (24)
W 213	Artificial or Unknown found in <213> in SEQ ID (25)
W 213	Artificial or Unknown found in <213> in SEQ ID (26)
W 213	Artificial or Unknown found in <213> in SEQ ID (27)
W 213	Artificial or Unknown found in <213> in SEQ ID (28) This error has occurred more than 20 times, will not be displayed
W 402	Undefined organism found in <213> in SEQ ID (39)
W 402	Undefined organism found in <213> in SEQ ID (43)
W 402	Undefined organism found in <213> in SEQ ID (44)
W 402	Undefined organism found in <213> in SEQ ID (46)
W 402	Undefined organism found in <213> in SEQ ID (50)
W 402	Undefined organism found in <213> in SEQ ID (51)
W 402	Undefined organism found in <213> in SEQ ID (54)
W 402	Undefined organism found in <213> in SEQ ID (55)
W 402	Undefined organism found in <213> in SEQ ID (56)
W 402	Undefined organism found in <213> in SEQ ID (59)
W 402	Undefined organism found in <213> in SEQ ID (61)
W 402	Undefined organism found in <213> in SEQ ID (62) This error has occurred more than 20 times, will not be displayed



SEQUENCE LISTING

<110> Inouye, Masayori  
Zhang, Junjie  
Zhang, Yong Long  
Qing, Guoliang  
Suzuki, Motoo

<120> mRNA Interferases and Methods of Use Thereof

<130> University of Medicine & Dentistry of New Jersey (601-1-131PCT)

<140> 10560303

<141> 2007-09-26

<150> PCT/US2004/018571

<151> 2004-06-14

<150> 60/543,693

<151> 2004-02-11

<150> 60/478,515

<151> 2003-06-13

<160> 92

<170> FastSEQ for Windows Version 4.0

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<211> 336

<212> DNA

<213> E. coli

<400> 1

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aaaggtagcg agcaagctgg acatcgtcca gctgttgtcc ttagtcctt catgtacaac 120  
aacaaaaacag gtatgtgtct gtgtgttcct tgtacaacgc aatcaaaagg atatccgttc 180  
gaagttgttt tatccggtca ggaacgtgat ggcgttagcgt tagctgatca ggtaaaaagt 240  
atcgcctggc gggcaagagg agcaacgaag aaaggaacag ttgccccaga ggaattacaa 300  
ctcattaaag caaaaattaa cgtactgatt gggtag 336

<210> 2

<211> 111

<212> PRT

<213> E. coli

<400> 2

Met Val Ser Arg Tyr Val Pro Asp Met Gly Asp Leu Ile Trp Val Asp  
1 5 10 15

Phe Asp Pro Thr Lys Gly Ser Glu Gln Ala Gly His Arg Pro Ala Val  
20 25 30

Val Leu Ser Pro Phe Met Tyr Asn Asn Lys Thr Gly Met Cys Leu Cys  
35 40 45

Val Pro Cys Thr Thr Gln Ser Lys Gly Tyr Pro Phe Glu Val Val Leu

50	55	60	
Ser Gly Gln Glu Arg Asp	Gly Val Ala Leu Ala Asp Gln Val Lys Ser		
65	70	75	80
Ile Ala Trp Arg Ala Arg Gly Ala Thr Lys Lys Gly Thr Val Ala Pro			
	85	90	95
Glu Glu Leu Gln Leu Ile Lys Ala Lys Ile Asn Val Leu Ile Gly			
	100	105	110

<210> 3  
<211> 333  
<212> DNA  
<213> E. coli

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<400> 3
atggaaaagag gggaaatctg gcttgtctcg ctgtatccctt ccgcaggcgtca tgagcagcag 60
ggAACGCGGC cGGTGTGAT tGTCACACCG GCGGCCCTTA ATCGCGTGAC CCGCCTGCCT 120
gttggatgtgc ccgttaaccag cgaggaggcaat tttggcccgca ctgcccggctt tgccgtgtcg 180
ttggatgtgt ttggcatacg taccacaggt gttgtacgtt gcgtatcaacc ccggacaaatt 240
gatatgaaag cacggggcgg aaaacgactc gaacgggttc cggagactat catgaacgaa 300
gttcttqgccc qcctgtccac tattctqact tqa 333
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<210> 4  
<211> 110  
<212> PRT  
<213> E. coli

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<400> 4
Met Glu Arg Gly Glu Ile Trp Leu Val Ser Leu Asp Pro Thr Ala Gly
   1           5           10          15
His Glu Gln Gln Gly Thr Arg Pro Val Leu Ile Val Thr Pro Ala Ala
   20          25          30
Phe Asn Arg Val Thr Arg Leu Pro Val Val Val Pro Val Thr Ser Gly
   35          40          45
Gly Asn Phe Ala Arg Thr Ala Gly Phe Ala Val Ser Leu Asp Gly Val
   50          55          60
Gly Ile Arg Thr Thr Gly Val Val Arg Cys Asp Gln Pro Arg Thr Ile
   65          70          75          80
Asp Met Lys Ala Arg Gly Gly Lys Arg Leu Glu Arg Val Pro Glu Thr
   85          90          95
Ile Met Asn Glu Val Leu Gly Arg Leu Ser Thr Ile Leu Thr
  100         105         110

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<210> 5  
<211> 249  
<212> DNA  
<213> E. coli

<400> 5  
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ttaatgcagg ccctcaatct gaataattgtat gatgaagtga agattgactt gatggatggc 120

aaattaatta ttgagccagt gcgtaaagag cccgtatcca cgcttgctga actggtaac 180  
gacatcacgc cggaaaacct ccacgagaat atcgactggg gagagccgaa agataaggaa 240  
gtctggtaa 249

<210> 6  
<211> 82  
<212> PRT  
<213> E. coli

<400> 6  
Met Ile His Ser Ser Val Lys Arg Trp Gly Asn Ser Pro Ala Val Arg  
1 5 10 15  
Ile Pro Ala Thr Leu Met Gln Ala Leu Asn Leu Asn Ile Asp Asp Glu  
20 25 30  
Val Lys Ile Asp Leu Val Asp Gly Lys Leu Ile Ile Glu Pro Val Arg  
35 40 45  
Lys Glu Pro Val Phe Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro  
50 55 60  
Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu Pro Lys Asp Lys Glu  
65 70 75 80  
Val Trp

<210> 7  
<211> 258  
<212> DNA  
<213> E. coli

<400> 7  
atgcatacaca cccgactgaa gagggttggc ggctcagtt tgctgaccgt cccaccggca 60  
ctgctgaatg cgctgtctct gggcacagat aatgaagttt gcatggtcat tgataatggc 120  
cggctgattt ttgagccgta cagacgcccc caatattcac tggctgagct actggcacag 180  
tgtgatccga atgctgaaat atcagctgaa gaacgagaat ggctggatgc accggcgact 240  
ggtcaggagg aaatctga 258

<210> 8  
<211> 85  
<212> PRT  
<213> E. coli

<400> 8  
Met His Thr Thr Arg Leu Lys Arg Val Gly Gly Ser Val Met Leu Thr  
1 5 10 15  
Val Pro Pro Ala Leu Leu Asn Ala Leu Ser Leu Gly Thr Asp Asn Glu  
20 25 30  
Val Gly Met Val Ile Asp Asn Gly Arg Leu Ile Val Glu Pro Tyr Arg  
35 40 45  
Arg Pro Gln Tyr Ser Leu Ala Glu Leu Leu Ala Gln Cys Asp Pro Asn  
50 55 60  
Ala Glu Ile Ser Ala Glu Glu Arg Glu Trp Leu Asp Ala Pro Ala Thr  
65 70 75 80  
Gly Gln Glu Glu Ile  
85

<210> 9  
<211> 24  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> T54 to K77 fragment of E. coli MazE

<400> 9  
Thr Leu Ala Glu Leu Val Asn Asp Ile Thr Pro Glu Asn Leu His Glu  
1 5 10 15  
Asn Ile Asp Trp Gly Glu Pro Lys  
20

<210> 10  
<211> 18  
<212> PRT  
<213> Artificial Sequence

<220>  
<223> N60 to K77 fragment of E. coli MazE

<400> 10  
Asn Asp Ile Thr Pro Glu Asn Leu His Glu Asn Ile Asp Trp Gly Glu  
1 5 10 15  
Pro Lys

<210> 11  
<211> 30  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> synthetic RNA substrate

<400> 11  
uaagaaggag auauacauau gaaucaaauc 30

<210> 12  
<211> 50  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> single stranded oligonucleotide

<400> 12  
gctcgatct acaatgtaga ttgatata ctgtatctac atatgatagc 50

<210> 13  
<211> 50

<212> DNA  
<213> Artificial Sequence

<220>  
<223> single stranded oligonucleotide

<400> 13  
cgagcataga tgttacatct aactataatat gacatagatg tatactatcg 50

<210> 14  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> synthetic oligonucleotide

<400> 14  
agatctcgat cccgcaaatt aat 23

<210> 15  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 15  
tttagagatca atttcctgcc gttttac 27

<210> 16  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 16  
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<210> 17  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 17  
tgcttttat cccacgggca gc 22

<210> 18  
<211> 24

<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 18  
gcccagttca ccgcgaagat cgtc

24

<210> 19  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 19  
ggttttgatt tgctccaaac gggcaag

27

<210> 20  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 20  
catttcctcc tccagtttag cctggtc

27

<210> 21  
<211> 27  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 21  
ttgccagact tcttccattg ttccgag

27

<210> 22  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 22  
gatccccaca atgcgggtgac gagt

24

<210> 23  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 23  
cacgttgtcc actttgttca ccgc 24

<210> 24  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 24  
cagttcagcg ccgaggaaac gcat 24

<210> 25  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 25  
gcgttcgtcg tcggcccaac cgga 24

<210> 26  
<211> 30  
<212> RNA  
<213> Artificial Sequence

<220>  
<223> antisense RNA

<400> 26  
gauuugauuc auauguaau cuccuucuua 30

<210> 27  
<211> 30  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> complementary DNA

<400> 27  
gatttgattc atatgtatat ctcccttctta 30

<210> 28  
<211> 22  
<212> DNA  
<213> Artificial Sequence

<220>

<223> DNA primer

<400> 28

agaatgtgcg ccattttca ct

22

<210> 29

<211> 9

<212> DNA

<213> Artificial Sequence

<220>

<223> DNA fragment

<400> 29

taatacacc

9

<210> 30

<211> 15

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic oligonucleotide

<400> 30

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15

<210> 31

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> DNA fragment

<400> 31

catcatcatc atcatcat

18

<210> 32

<211> 12

<212> DNA

<213> Artificial Sequence

<220>

<223> DNA fragment

<400> 32

atcgaaggta gg

12

<210> 33

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> multiple cloning site

<400> 33  
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<210> 34  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 34  
caggagauac cucaaugauc a 21

<210> 35  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 35  
ctcaatgatc acaggagata c 21

<210> 36  
<211> 21  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 36  
tcctctatgg agttactagt g 21

<210> 37  
<211> 16  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 37  
gggacaggag atacct 16

<210> 38  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> DNA primer

<400> 38  
tgtcctctat ggagttacta gtg

23

<210> 39  
<211> 330  
<212> DNA  
<213> *Bacillus halodurans*

<400> 39  
atgccagtag cggatagagg gaatcttgtt tatgttagact ttaacccaca atcgggtcat 60  
gaccaagccc ggacacgacc ggctattgtt ttgtccctta aattatttaa taaaaacaca 120  
ggtttgcgg tggttgtcc aattaccaga caacaaaag gttatcctt tgaaatagaa 180  
ataccaccgg ggttacctat tgaagggggtt attcttactg accaagtaaa aagtctggat 240  
tggagagcaa gaaaccttca cattaaagga caagcacccag aggaaactgt tactgattgt 300  
ttacaactta ttcatatcatt tttatcttaa 330

<210> 40  
<211> 363  
<212> DNA  
<213> *Staphylococcus epidermidis*

<400> 40  
atgattagaa gaggagatgt ttathtagcg gatttacac cagttcaagg gtctgaacaa 60  
gggggagtaa gacctgttgt tatcattca aatgatactg gtaataaata tagtccaact 120  
gtaattgttag ctgcgattac tgatggatt aataaagcga aaataccaac ccacgtagaa 180  
attgaaaaga aaaagtataa attagacaaa gattcatgtt ttcttcttga acaaattaga 240  
acactagata aaaagcgttt aaaagaaaaaa ttaacatttt tattcagagag taaaatgata 300  
gaggttgata atgcctttaga tattagtttggattaaata actttgtca tcataaatct 360  
taa 363

<210> 41  
<211> 411  
<212> DNA  
<213> *Staphylococcus aureus*

<400> 41  
atgattagac gaggagatgt ttathtagca gatttacac cagtcacagg atctgaacaa 60  
gggggagtcg gacctgttgt cataattca aatgatactg gtaataaata tagtccatca 120  
gttattgttg cgcaataac tgtaggatt aataaagcga aaataccgac acatgttagag 180  
attgaaaaga aaaagtataa gtggataaa gactcatgtt tattttaga acaaattcg 240  
acacttgata aaaaacgatt gaaagaaaaaa ctgacgtact tatccatca taaaatgaaa 300  
gaagtagata atgcactaat gattgttta gggctgaatg cagtagctca accagaaaa 360  
ttaggcgtct attatatgtt ttttcagag ataaataaaa tattgtata a 411

<210> 42  
<211> 351  
<212> DNA  
<213> *Bacillus subtilis*

<400> 42  
ttgattgtga aacgcggcga tgtttatggt gctgattttt ctccctgttggctcagag 60  
caaggcgccccgggg tgcgcgggtt ttagtgcata caaaatgaca tcggaaatcg cttcagccca 120  
actgctattt tgcaagccat aacagcacaa atacagaaag cgaaattacc aacccacgtc 180  
gaaatcgatg caaaacgcta cgggtttgaa agagattccg ttatggatgttggctcagag 240  
cggacgattt gcaagcaag gtaaacggat aagattactc atctggatga tgaaatgatg 300  
gataagggtt gatgaagcctt acaaatacgat ttggcactca ttgatggatgttggctcagag 351

<210> 43  
<211> 324  
<212> DNA  
<213> Neisseria meningitidis

<400> 43  
atggatatgg tagtacgcgg cggaaatctat ctgggtctcct tagacccgac cgttaggaagc 60  
gaaatcaaaa agacacgtcc ttgtgtcgta gtctctcctc ctgaaataca caactatctc 120  
aagactgtgc tgatcggtcc catgacgagc ggaagccgtc ctgccccgtt ccgcgtcaat 180  
gtcccgcttc aggataaaga cggtttgttt ttgcccgaac agattaggc tgtggataaa 240  
gccggatttg tcaaacatct tggcaattta gacaacagta cggtgtaaaa actgtttgca 300  
gtattgcagg agatgtttgc ctga 324

<210> 44  
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<212> DNA  
<213> Morganella morgani

<400> 44  
atgcgcgcggc ggctggtcag gaggaaatct gacatggaaa gaggggaaat ctggcttgc 60  
tcgcttgacc ctaccgcagg tcatgagcac cagggAACgc gggcggtact gattgtcacc 120  
ccggctgctt ttaaccgcgt gacccgcctg cctgttgttgc tgcccggtac cagcggaggt 180  
aattttgcgc gcacagcagg cttgtgtgc tcgcttgcac ggcggccat acgtaccacc 240  
ggcgttgtgc gttgcgatca accccggacg atcgatatga aagccgcgg cggcaaacga 300  
ctcgaacggg tgccagagac tatcatggac gacgttcttgc gccgtctggc caccatcctg 360  
acctga 366

<210> 45  
<211> 321  
<212> DNA  
<213> Mycobacterium tuberculosis

<400> 45  
gtggtgattc ggggagcgggt ctacagggtc gacttcggcg atgcgaagcg aggccacgag 60  
caacgcgggc ggcgcgtacgc cgtggtcatac agcccccggct cgtatgcgtg gagtgttagta 120  
accgtgggtgc cgacgtcgac aagcgcggccaa cctgcgggtt tccgaccaga gctggaagtc 180  
atgggaacaa agacacgggtt cctgggtggat cagatccgga cgcgtggcat cgtctatgtg 240  
cacggcgatc cggtcgacta tctggaccgt gaccaaattgg ccaagggtgga acacgcgtg 300  
gcacgataacc ttggctgtgc a 321

<210> 46  
<211> 109  
<212> PRT  
<213> Bacillus halodurans

<400> 46  
Met Pro Val Pro Asp Arg Gly Asn Leu Val Tyr Val Asp Phe Asn Pro  
1 5 10 15  
Gln Ser Gly His Asp Gln Ala Gly Thr Arg Pro Ala Ile Val Leu Ser  
20 25 30  
Pro Lys Leu Phe Asn Lys Asn Thr Gly Phe Ala Val Val Cys Pro Ile  
35 40 45  
Thr Arg Gln Gln Lys Gly Tyr Pro Phe Glu Ile Glu Ile Pro Pro Gly  
50 55 60  
Leu Pro Ile Glu Gly Val Ile Leu Thr Asp Gln Val Lys Ser Leu Asp  
65 70 75 80

Trp Arg Ala Arg Asn Phe His Ile Lys Gly Gln Ala Pro Glu Glu Thr  
85 90 95

Val Thr Asp Cys Leu Gln Leu Ile His Thr Phe Leu Ser  
100 105

<210> 47

<211> 120

<212> PRT

<213> Staphylococcus epidermidis

<400> 47

Met Ile Arg Arg Gly Asp Val Tyr Leu Ala Asp Leu Ser Pro Val Gln  
1 5 10 15

Gly Ser Glu Gln Gly Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp  
20 25 30

Thr Gly Asn Lys Tyr Ser Pro Thr Val Ile Val Ala Ala Ile Thr Asp  
35 40 45

Gly Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys  
50 55 60

Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg  
65 70 75 80

Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Phe Leu Ser Glu  
85 90 95

Ser Lys Met Ile Glu Val Asp Asn Ala Leu Asp Ile Ser Leu Gly Leu  
100 105 110

Asn Asn Phe Asp His His Lys Ser  
115 120

<210> 48

<211> 136

<212> PRT

<213> Staphylococcus aureus

<400> 48

Met Ile Arg Arg Gly Asp Val Tyr Leu Ala Asp Leu Ser Pro Val Gln  
1 5 10 15

Gly Ser Glu Gln Gly Gly Val Arg Pro Val Val Ile Ile Gln Asn Asp  
20 25 30

Thr Gly Asn Lys Tyr Ser Pro Thr Val Ile Val Ala Ala Ile Thr Gly  
35 40 45

Arg Ile Asn Lys Ala Lys Ile Pro Thr His Val Glu Ile Glu Lys Lys  
50 55 60

Lys Tyr Lys Leu Asp Lys Asp Ser Val Ile Leu Leu Glu Gln Ile Arg  
65 70 75 80

Thr Leu Asp Lys Lys Arg Leu Lys Glu Lys Leu Thr Tyr Leu Ser Asp  
85 90 95

Asp Lys Met Lys Glu Val Asp Asn Ala Leu Met Ile Ser Leu Gly Leu  
100